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Hazardous Site Cleanup Division (3HS21)  
U.S. Environmental Protection Agency

## RESPONSE TO COMMENTS ON PROPOSED SHEETPILE REPAIR

Dear Mr. Geiger,

July 31, 2015

This letter provides a written response to the June 2, 2015, comments to the proposed sheetpile repair work plan. The responses presented here were previously discussed with you and your team on a June 22 conference call, as well as in subsequent communications between RA Consultants (RAC) and the United States Army Corps of Engineers (USACE). It is our understanding that our responses to the comments, as discussed on the phone, and as presented here, address all the concerns identified by your team. If, following review of this document, you should find this not to be the case, please notify us at your earliest convenience, so that we may address any remaining issues in the most expeditious way possible. It is our aim to finalize the work plan and solicit bids by August 15<sup>th</sup>.

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### USACE Comments

1. *There are no calculations supporting the choice of the new steel W section for the waler. These are not necessary for the bid package but we discussed at the last inspection that they should be submitted to the EPA and stamped by a structural Professional Engineer.*

Calculations have been provided, reviewed, and discussed between RAC and USACE following the June 22 conference call. It is our understanding that all concerns have been addressed.

2. *What is the Design Load they will be testing to for each tie-rod? Is it consistent across the site or does it vary at different locations? Has the required design load changed due to the rip-rap addition on the outside toe?*

Design loads vary by tie-rod as depicted on Figure 2 in the work plan. The load on the tie-rods will be reduced after placement of the rip-rap. It is our understanding that additional concerns regarding design load calculations under various scenarios have been discussed and addressed between RAC and USACE.

3. *The drawings don't show the current state of the waler and the tie rods. They are misaligned in all directions. How will the elevation difference be accounted for? Will the waler be run on a diagonal? Will the contractor be allowed to use force to line things up? If the contractor is expected to design these fixes they will need to be stamped by a structural Professional Engineer.*

The waler repair involving removal, replacement, and reattachment will be performed by the contractor in the field under the oversight of an RAC structural or geotechnical engineer. Depending on the conditions in the field, adjustments to the proposed plan may be required. In this event, we will seek input and approval from USEPA and its contractors.

4. *Since it seems that the contractor will be doing a lot of the design work, will EPA/USACE have a chance to comment on the submittals?*

Yes. USEPA/USACE will be provided an opportunity to review and comment on all contractor submittals. We will provide several days' notice on upcoming submittals and kindly request that USEPA/USACE review and comment on the submittals within one business week in order to maintain the project schedule.

5. *Are the dead men located in clean or contaminated soil? Will the contractor be able to replace a dead man/ tie rod in the unlikely event that it fails during load testing? Has exploratory excavation of the dead men in the failure area been considered to check for settlement and or other issues*

The deadmen are located in clean fill, immediately above, and in very close proximity to, the contaminated soils beneath. We do not intend to ask the contractor to excavate and replace deadmen, as this may adversely affect successful components of the remedy. Should any deadman/tie-rod assembly be found to be deficient, we expect to address the issue through the placement of additional rip-rap on the water-side of the sheetpile, as necessary. Should this scenario occur in the field, USEPA and USACE will be notified in advance.

## CDM Comments

6. *Sometimes the types of movement observed at the site are caused by inadequate deadman design. Please indicate if the original deadman design was reviewed for passive resistance.*

Following this comment, an updated evaluation of passive resistance was performed on the deadmen design, indicating that the deadmen provide sufficient passive resistance to manage the calculated loads.

7. *The term “sudden change or movement” should be defined. A recommended definition is 1-inch from the original position at the start of construction, using the survey monitoring points for reference.*

While our calculations indicate that we do not expect to see any sudden movement, we agree with the commenter that a definition of “sudden change or movement” is needed. We propose a 0.5-inch tolerance from the original position at the start of construction. Further, we propose that additional survey points be added in the vicinity of the waler break and that the wall be continuously surveyed during the detensioning of the waler prior to repair. These changes are reflected in the updated bid package.

8. *The waler rehab figure shows full penetration welds as field welds. Although field welds are the only possible way to make these connections, the following notes should be added to provide provisions that these critical connections are performed in a quality manner: Make tack welds with the same type of electrode and incorporate into the final weld. No other tack welding will be permitted. Do not weld when surfaces to be welded are moist or exposed to rain, snow, or wind, or when welders are exposed to inclement condition that will adversely affect the quality of work. Do not weld or burn when the temperature is below 0° F. Preheat and maintain the temperature of the metal to at least 0° F when the temperature of the metal is between 0° and 32° during welding or burning. Preheat the steel to the specified minimum temperature for a distance equal to the thickness of the part being welded, but not less than 3 inches in all directions from the point of welding. Prior to placing the weld, thoroughly clean all portions of new and existing surfaces to receive weld of all foreign matter, including paint film, for a distance of 2 inches from each side of the outside lines of the weld. Also, please show a weld specification manual that the contractor will have to abide by. The American Welding Society (AWS) publishes welding standards that should be applicable to this work.*

We agree with the commenter that the bid package should include specific welding standards and we have included the relevant portions of the AWS standards via reference in the updated bid package.

9. *There are scanned photographs on this figure depicting the relative displacements of the walers. Please explain how the contractor will winch the walers back into the same plane to make the connections noted in Sections F or J.*

See response to Comment 3.

*10. The allowable method for removing damaged portions of the walers should be specified. If heat is allowed, too much will damage good portions of adjacent steel. The contractor should be required to submit a heat monitoring procedure in the "Waler Repair Sequence and Procedures" under required submittals. If heat (torching) is not allowed, then damaged portions must be removed by mechanical means.*

We have updated the bid package to include a requirement for the contractor to justify the use of heat as a tool for removing damaged portions of the wale. Most likely, mechanical means will be employed; however, should the contractor wish to use heat, USEPA and its contractors will have an opportunity to review and comment on the contractor's proposed approach documented in the submittal.

*11. A five foot high block seems short for this wall type and may have caused the movement issues. If this is still be relied on, even with the repairs, the passive resistance should be verified.*

See response to Comment 6.

Yours sincerely



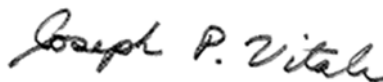
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